RELIABILITY ENGINEERING (ENRE)

Graduate Degree Program
College: Engineering

Abstract
Reliability Engineering is an interdisciplinary program of the Department of Mechanical Engineering. The academic and research programs are based upon the recognition that the performance of a complex system is affected by engineering inputs that begin at conception and extend throughout its lifetime. Students may specialize in Assessment (Root-Cause Failure Analysis, Probabilistic Risk Assessment, Common-Cause Failures); Testing and Operation (Operator Advisory Systems, Human Reliability, Software Reliability); Manufacturing (Statistical Process Control, Improved Manufacturing Methods); Component and Structures Reliability (Microelectronics and Materials); or Electronic Packaging Reliability.

Financial Assistance
Financial assistance is available to highly qualified students in the form of research and teaching assistantships. The most outstanding applicants are offered fellowships. Students seeking financial assistance are asked to submit with their applications a current resume or CV as well as a statement regarding their qualifications and/or past research or teaching experience. Financial assistance is sought for all worthy students.

Contact
Kerri Poppler James
Associate Director of Graduate Studies
Department of Mechanical Engineering
2178 Glenn L. Martin Hall
4298 Campus Drive
University of Maryland
College Park, MD 20742
Telephone: 301.405.8601
Fax: 301.405.8015
Email: kjames3@umd.edu

Hugh A. Bruck
Professor, Associate Chair, and Director of Graduate Studies
Department of Mechanical Engineering
2174 Glenn L. Martin Hall
4298 Campus Drive
University of Maryland
College Park, MD 20742
Telephone: 301.405.8711
Fax: 301.314.9477
Email: bruck@umd.edu

Mohammad Modarres
Professor and Co-Director of Reliability Engineering Graduate Program
Department of Mechanical Engineering
0151 Glenn L. Martin Hall
4298 Campus Drive
University of Maryland
College Park, MD 20742
Telephone: 301.405.5226
Email: modarres@umd.edu
Website: http://www.enme.umd.edu

Admissions

General Requirements
• Statement of Purpose
• Transcript(s)
• TOEFL/IELTS/PTE (international graduate students (https://gradschool.umd.edu/admissions/english-language-proficiency-requirements))

Program-Specific Requirements
• Letters of Recommendation (3)
• Graduate Record Examination (GRE) (recommended)
• CV/Resume
• Publications/Presentations

The Program offers graduate study leading to the Master of Science, Professional Master of Engineering (offered through the Office of Advanced Engineering Education), and Doctor of Philosophy degrees and is open to students who have a Bachelor of Science degree in engineering, physics, or mathematics and obtained a GPA of at least 3.0 on a 4.0 scale from accredited programs. An individual plan of graduate study compatible with the student's interest and background is established by the student in consultation with an advisor. In some cases, it may be necessary to require background courses to fulfill prerequisites.

For more admissions information or to apply to the program, please visit our Graduate School website: www.gradschool.umd.edu/admissions

Application Deadlines

<table>
<thead>
<tr>
<th>Type of Applicant</th>
<th>Fall Deadline</th>
<th>Spring Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic Applicants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>International Applicants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F (student) or J (exchange visitor) visas; A,E,G,H,I and L visas and immigrants</td>
<td>15 Mar</td>
<td>28 Sep</td>
</tr>
</tbody>
</table>

Other Deadlines: Please visit the program website at http://www.enme.umd.edu

Requirements
• Reliability Engineering, Doctor of Philosophy (Ph.D.) (https://academiccatalog.umd.edu/graduate/programs/reliability-engineering-enre/reliability-engineering-phd)
• Reliability Engineering, Master of Science (M.S.) (https://academiccatalog.umd.edu/graduate/programs/reliability-engineering-enre/reliability-engineering-ms)
Facilities and Special Resources

Students and faculty have access to a host of special facilities in the College of Engineering, including the nuclear reactor, an 8-MeV electron linear accelerator; environmental chambers; mechanical testing, SEM, X-ray and imaging facilities; and extensive computer resources. The program also has a complete failure analysis laboratory.

Faculty

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First/Middle Name</th>
<th>Graduate Faculty Status</th>
<th>Academic Credentials</th>
<th>Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ayyub</td>
<td>Bilal M.</td>
<td>Full Member</td>
<td>B.S., Kuwait University, 1980; M.S., Georgia Institute of Technology, 1981; Ph.D., 1983.</td>
<td>Professor, Applied Mathematics &amp; Statistics, and Scientific Computation Professor; Reliability Engineering Professor; Civil and Environmental Engineering Professor; Materials Science and Engineering Professor, Mechanical Engineering Professor, Reliability Engineering Associate Professor; Mechanical Engineering Associate Professor; Reliability Engineering Associate Professor; Electrical and Computer Engineering Affiliate Associate Professor; Electrical and Computer Engineering Affiliate Associate Professor; Computer Science</td>
</tr>
<tr>
<td>Christou</td>
<td>Aristos</td>
<td>Full Member</td>
<td>B.A., Columbia University, 1967; Ph.D., University of Pennsylvania, 1971</td>
<td></td>
</tr>
<tr>
<td>Cukier</td>
<td>Michel</td>
<td>Full Member</td>
<td>Ph.D., National Polytechnic Institute of Toulouse, France, 1996</td>
<td></td>
</tr>
<tr>
<td>Modarres</td>
<td>Mohammad</td>
<td>Full Member</td>
<td>B.S., Tehran Polytechnic Institute, 1974; M.S., Massachusetts Institute of Technology, 1976; Ph.D., 1979.</td>
<td>Co-Director, Reliability Engineering Professor, Mechanical Engineering Engineering Professor, Reliability Engineering Professor, Reliability Engineering</td>
</tr>
</tbody>
</table>

Dasgupta Abhijit Full Member B.S., Indian Institute of Technology-Madras, 1976; M.S., Villanova University, 1981; Ph.D., University of Illinois-Urbana-Champaign, 1988. Professor, Mechanical Engineering Professor, Reliability Engineering

Gabriel Steven Full Member B.A., Middlebury College, 1981; M.S., Stanford University, 1984; M.A., Johns Hopkins University, 1988; Ph.D., Johns Hopkins University, 1992 Assistant Professor, Reliability Engineering

Groth Katrina Full Member B.S., University of Maryland-College Park, 2004; M.S., University of Maryland-College Park, 2008; Ph.D., University of Maryland-College Park, 2009 Assistant Professor, Reliability Engineering

Modarres Mohammad Full Member B.S., Tehran Polytechnic Institute, 1974; M.S., Massachusetts Institute of Technology, 1976; Ph.D., 1979. GCEN Academic Advisor for Nuclear Engineering GCEN Academic Advisor for Reliability Engineering
<table>
<thead>
<tr>
<th>Name</th>
<th>Ali Mosleh</th>
<th>Full Member</th>
<th>B.S., University of Technology-Tehran, 1975; M.S., University of California-Los Angeles, 1978; Ph.D., 1981.</th>
<th>Director, Reliability Engineering Professor; Mechanical Engineering Professor, Reliability Engineering Professor.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pertmer</td>
<td>Gary A. Pertmer</td>
<td>Full Member</td>
<td>B.S., Iowa State University, 1971; M.S., University of Missouri-Columbia, 1973; Ph.D., 1978.</td>
<td>Associate Professor, Mechanical Engineering Associate Professor, Reliability Engineering Professor.</td>
</tr>
<tr>
<td>Roush</td>
<td>Marvin L. Roush</td>
<td>Full Member</td>
<td>B.Sc., Ottawa University, 1956; Ph.D., University of Maryland-College Park, 1964.</td>
<td>Professor Emeritus, Reliability Engineering.</td>
</tr>
<tr>
<td>Vaughn-Cooke</td>
<td>Monifa Vaughn-Cooke</td>
<td>Full Member</td>
<td>B.S., The University of Southern California; M.S., The University of Southern California; Ph.D., The Pennsylvania State University</td>
<td>Assistant Professor, Mechanical Engineering Assistant Professor, Reliability Engineering.</td>
</tr>
</tbody>
</table>